

NEWSLINE

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Accelerating Biomedical Research

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LAB ANNOUNCEMENTS

Merger creates Chemistry, Materials and Life Sciences

Chemistry and Materials Science and Biosciences will merge into one directorate, Director George Miller announced Thursday. The new directorate will be titled Chemistry, Materials and Life Sciences and will be led by Tomás Díaz de la Rubia.

The realignment is effective Sept. 15, 2006.

Elbert Branscomb, associate director of Biosciences, will serve as senior scientific advisor to the new directorate.

The merger will better position the Lab to meet its security missions in biodefense and energy security while maintaining its strong role in chemistry and materials science, Miller said.

"This partnership makes sense from scientific and operational perspectives," Miller explained. "Lab chemists and biologists have been working together increasingly in recent years on multidisciplinary research projects, including biological and chemical weapons detection and analysis of microbial pathogens."

The merger is the culmination of Branscomb's assignment when he was appointed



Tomás Díaz de la Rubia

associate director of Biosciences in 2004. Along with running the directorate, he was tasked with building ties to other Lab programs and capabilities, particularly in the areas of environmental research and biological weapons nonproliferation.

"The thrusts that Elbert emphasized in his tenure — microbial biology, systems biology, nanobiotechnology



Elbert Branscomb

and host pathogen biology — will continue, and I believe thrive, with the CMS alliance," Miller said.

The directorate will be made up of three divisions encompassing materials science, chemistry and chemical engineering, and biosciences and biotechnology. Nina Rosenberg will lead the biosciences and biotechnology division. Rosenberg most

recently served as the division leader for the Chemical Biology and Nuclear Science Division of CMS. Prior to that assignment, she served as deputy program leader within NAI's Technology Program Office. She previously has worked at Los Alamos National Laboratory. Rosenberg received a Ph.D. in geological sciences from UC Santa Barbara.

To see an organizational chart of the new directorate, look in today's (Aug. 25) edition of *NewsOnLine*, https://portal.llnl.gov/portal/page/portal/MYLLNL/FRONT_PAGE.

At an all-hands meeting held on Thursday for both Bioscience and Chemistry and Materials Science employees, Díaz de la Rubia outlined his vision for the new directorate and the need for "outstanding science that supports and enhances LLNL's mission goals. Through this merger of chemistry and biosciences we can help take Laboratory research to the next level. I look forward to working with all of the biosciences employees and the CMS employees to make this happen."

DOE announces teams to study using nuclear energy for clean hydrogen

WASHINGTON, DC - The U.S. Department of Energy (DOE) has announced that it intends to fund approximately \$1.4 million (subject to negotiation) for two projects to partner with industry to study the economic feasibility of producing hydrogen at existing commercial nuclear power plants. Teams selected by DOE for funding will be headed by Electric Transportation Applications and GE Global Research. Both teams include DOE national laboratories and nuclear utility companies as partners.

"Hydrogen is important to our economy today and will be even more important in the future as a potential clean, renewable carrier of energy, particularly in the transportation area," said DOE Assistant Secretary for Nuclear Energy Dennis Spurgeon. "Finding efficient ways to produce hydrogen by using emissions-free nuclear power

has long been an important part of President Bush's energy strategy."

Electric Transportation Applications plans to perform a study looking at the economics of producing hydrogen at existing nuclear power plants using commercially available production technology. ETA will partner with DOE's Idaho National Laboratory and Arizona Public Service.

GE Global Research proposes a feasibility study of hydrogen production using alkaline electrolysis powered by existing nuclear power plants. Their proposal is based on the low-cost alkaline electrolyzer technology developed by GE, in part under DOE's Hydrogen Program. Partners for this project include DOE's National Renewable Energy Lab and the Entergy Corporation.

"Both of these proposals involve very strong

project teams, with a lot of experience in both the nuclear energy and hydrogen production areas," Spurgeon said. "I believe the results of their studies will bring a good deal of new information to the question of how to use nuclear energy to efficiently produce hydrogen in this country."

These studies support President Bush's Advanced Energy and Hydrogen Fuel Initiatives, as well as the Energy Policy Act of 2005, the first piece of comprehensive energy legislation in more than a decade. Funding for these studies is provided by the DOE Office of Nuclear Energy's Nuclear Hydrogen Initiative, with industry sharing a minimum of 20 percent of the cost.

For more information on the Department of Energy's nuclear energy programs, visit: <http://nuclear.gov/>.

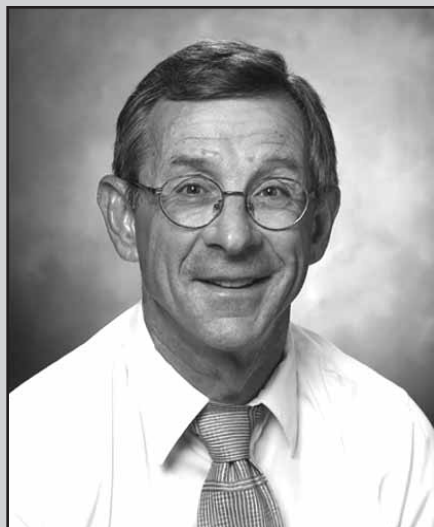
LAB ANNOUNCEMENTS

Tom Isaacs appointed to nuclear waste advisory board

Tom Isaacs, director of the Lab's Office of Policy, Planning and Special Studies, has been appointed to an international board of counsellors to provide policy advice and information to the president and senior staff of Japan's Nuclear Waste Management Organization (NUMO).

Isaacs is one of four members of the new advisory board, which is scheduled to hold its first meeting in November. NUMO, an arm of Japan's Ministry of International Trade and Industry, is responsible for the management and disposal of all Japanese high-level radioactive waste.

In a letter inviting Isaacs to



Tom Isaacs

join the board, NUMO President Kenji Fushimi said Isaacs "would be an extremely valuable member of this Board, because of your wide experience in the nuclear field in general and, specifically, in radioactive waste management both in the USA and internationally."

Fushimi said the board was being established because "the challenges facing all waste disposal programs at present are both societal and technical — and must therefore be addressed at the highest strategic level."

Before joining LLNL in 1996, Isaacs held a variety of positions within the U.S. Department of Energy, including executive director of DOE's Advisory Committee on External

Regulation of DOE Nuclear Safety, director of Strategic Planning and International Programs, and deputy director of the Office of Geologic Repositories for the department's radioactive waste program. He also served on the National Research Council's Committees on Principles and Operational Strategies for Staged Repository Systems and Building a Long-Term Environmental Quality Research and Development Program in DOE.

Isaacs received a bachelor's degree in chemical engineering from the University of Pennsylvania and masters' degrees in engineering and applied physics from Harvard University.

Laboratory-produced construction safety video wins industry awards

A Laboratory-produced construction safety video has won two prestigious industry awards.

Plant Engineering's "Contractors Construction Safety Orientation at LLNL" earned awards from AEGIS and a Digital Video Magazine.

"By winning these two awards, Plant Engineering demonstrates its commitment to fostering a safety-first culture at the Laboratory," said Dave Leary, deputy director for Operations. "The kind of communication this video represents is key to creating and sustaining a safe and productive work environment."

The video, which also has a Spanish language version, is required viewing for all sub-contractors performing construction work at the Lab.

Members of the Lab video production team include: Mimi Alford, Mike Betz, Cheryll Nunez, Mike Sa, Sheree Swanson, Barb Quivey, Collette Nida, Kevin Akey, Bob Sutay, Peter Huddleston, Drina Cruz, and Mike Esselman. Leary presented the awards to the team last week.



JOSEPH MARTINEZ/TID

Plant Engineering's "Contractors' Construction Safety Orientation at LLNL" earned awards from AEGIS and a Digital Video Magazine. Members of the Lab video production team include, from left: Mimi Alford, Bob Sutay, Dave Leary (who presented the awards), Mike Betz, Barb Quivey, Kevin Akey, Collette Nida, Mike Sa, Cheryll Nunez and Sheree Swanson.

The Aegis Awards is one of the oldest and most respected video/film production contests in the United States, recognizing the people and organizations responsible for developing some of the most effective video/film productions produced today. Previous winners include a distinctive group of news and media organizations, government agencies, universities and corporations including NASA and well-known Fortune 500 companies.

The DV Awards (sponsored by the Digital Video Magazine), is an international competition celebrating outstanding creative and technical achievements in digital video production such as independent films, commercials, corporate communications and industrial videos.

This is not the first recent recognition for Plant Engineering safety videos. A video on the soil excavation and concrete penetration permit process at the Lab earned a Government Magazine STAR award in November 2004. The safety videos are part of a larger contractor construction safety education and awareness program.

SCIENCE NEWS

CAMS proves its versatility as biomedical research tool

By Charles Osolin

Newsline staff

It's an inconvenient truth for biomedical and pharmaceutical researchers: Lab rats aren't people. Experiments on laboratory animals can go only so far in revealing the effects of carcinogens, pollutants and new drugs on humans.

Fortunately, scientists now have access to a technology — originally developed to determine the age of archeological specimens — that can accurately determine how toxins, nutrients and other substances interact with human physiology, without risking the health of human subjects.

Accelerator mass spectrometry, or AMS, is the same technology used to carbon date the age of bones and historical artifacts such as the Shroud of Turin. In the last decade, researchers at the Laboratory and their collaborators have been applying the technique to biological research in an increasingly wide variety of studies.

AMS works by tracking the passage of chemicals through humans without disturbing normal metabolic processes. A small quantity, or "microdose" of a substance — such as a new drug or vitamin — is tagged with a radioactive isotope such as carbon-14 and then ingested by human subjects. Researchers use AMS to measure the number of carbon-14 atoms in samples of urine, feces, saliva or blood over the course of hours, days and weeks. This lets them trace how much of the substance is absorbed, how it travels through the body, what organs it affects, and how much is lost through excretion.

"There is a fundamental saying in toxicology that the dose makes the poison," said John Knezovich, director of LLNL's Center for Accelerator Mass Spectrometry (CAMS) and the University of California's Toxic Substances Research Program. "Accordingly, we need to know the levels at which a chemical becomes toxic, and AMS gives us a sensitive tool for making this determination."

The technique is remarkably sensitive and precise. The first experiment to trace the vitamin folic acid in a human was able to track a single dose of just 35 micrograms for 200 days.

"The potential applications for biomedical AMS are virtually endless," said LLNL biologist Ken Turteltaub, one of the developers of AMS for biological work. "Because the samples are so small, we

can look at isolated clusters of cells, such as breast cancer cells, and validate the results of animal studies. AMS's sensitivity lets us assess the effects of hormones at low concentrations, and we can label bacteria and viruses and study the early effects of infections. Drug companies can use AMS to help set the right dosage for new medications. With accelerator mass spectrometry we can address problems that can't be solved otherwise."

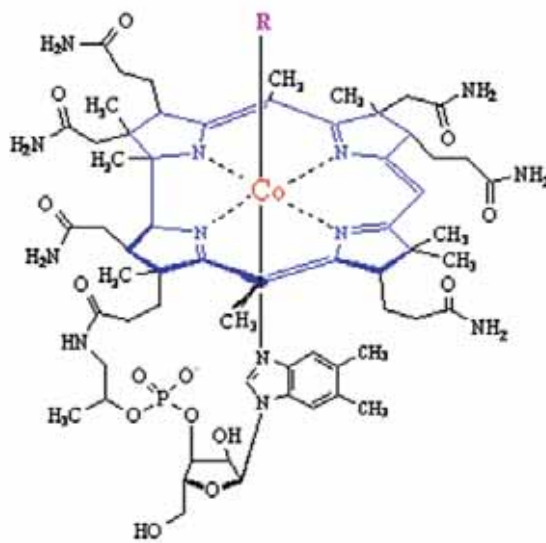
One such problem is determining how well people, especially the elderly, are able to absorb vitamin B12. An estimated one million Americans over the age of 65 have a condition known as pernicious anemia, which interferes



JACQUELINE MCBRIDE/NEWSLINE

Above: John Knezovich (center) confers with colleagues Ken Turteltaub (left) and Bruce Buchholz inside Livermore's Center for Accelerator Mass Spectrometry, which has been

designated by the National Institutes of Health as a National Resource for Biomedical Accelerator Mass Spectrometry (top, page 5). Inset left: The structure of the vitamin B12 molecule, subject of recent CAMS research that developed a safer, more accurate test for pernicious anemia.



with their ability to properly absorb the vitamin and puts them at risk for developing debilitating fatigue and neurological problems.

The current definitive test for pernicious anemia, called the Schilling test, is cumbersome and unreliable; it requires patients to ingest a low but significant amount of radiation and to collect all urine produced in a 24-hour period.

A new test using AMS, developed by researchers at LLNL and the University of California, Davis, uses a single drop of blood and involves negligible radiation exposure — an amount equivalent to that received on a cross-country flight. The safe, simple test would allow physicians to easily diagnose patients with vitamin B12

absorption problems before anemia, dementia and other permanent damage develop.

"Accelerator mass spectrometry is the most exciting tool to enter clinical development in the past several decades," said Stephen R. Dueker, a former UC Davis nutritional biochemist who is currently the president of Vitalea Science, a new company specializing in commercial applications of biomedical AMS. "The sky is the limit when you can get quantitative information from a single drop of blood," Dueker said.

"We've traced toxins, pesticides and nutrients in humans for academic studies for more than a decade at Lawrence Livermore," added CAMS nuclear physicist Bruce Buchholz, who designed dosimetry and conducted



ON THE COVER: LLNL physicist Bruce Buchholz adjusts an accelerator mass spectrometer dedicated to biological studies using carbon-14.

PHOTO: JACQUELINE MCBRIDE, NEWSLINE.

See AMS, page 5

SCIENCE NEWS

AMS

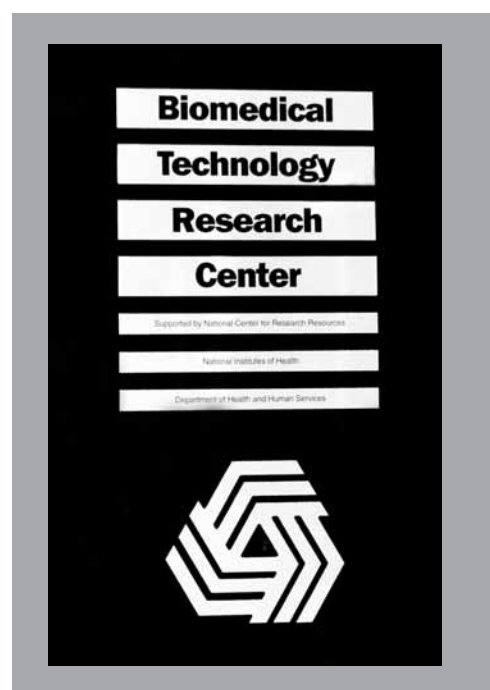
Continued from page 4

the accelerator mass spectrometry studies. "But this is the first clinical use of AMS."

To measure vitamin B12 absorption with the new test, the researchers had a healthy male subject drink water containing 1.5 micrograms of purified carbon-14-labeled vitamin B12 (^{14}C -B12), an amount of vitamin B12 equivalent to that found in a two-ounce steak. Blood samples were taken every hour for the first 12 hours, and then less frequently thereafter to assess absorption of the labeled vitamin. The blood samples were then analyzed at CAMS.

"Our study showed that labeled ^{14}C -B12 is

absorbed and metabolized normally and that we have a powerful new tool to assess vitamin B12 absorption," said Ralph Green, professor and chair in the Department of Pathology and Laboratory Medicine at UC Davis School of Medicine. "While Lawrence Livermore National Laboratory operates one of a handful of accelerator mass spectrometers in the United States applied to bioscience, I can envision a day when ^{14}C -B12 is formulated into tablet form and small, ^{14}C -labeled samples of blood from a finger-prick are mailed to a central laboratory for analysis. The new test promises to become the 'gold standard' for determining if a person suffers from malabsorption of vitamin B12."



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With their initial studies behind them, the researchers have patented the technology and are now planning to conduct additional human studies and license the technology to companies that will make the pernicious anemia test available to practicing physicians.

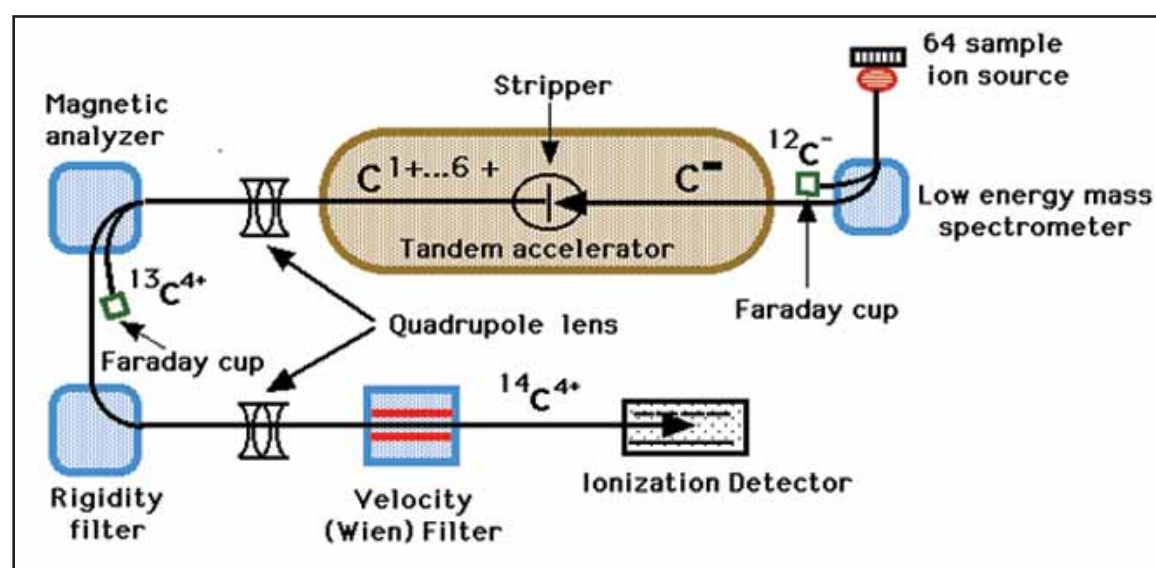
CAMS was established in 1989 to monitor the spread of nuclear weapons by detecting tell-tale radioisotopes in air, water and soil samples; to study climate and geological records; and to develop AMS for use in biomedicine. The Center is home to one of the world's most powerful and versatile AMS machines, a \$2-million, 15-meter-long accelerator used for a wide variety of isotope studies in collaboration with university researchers from around the globe.

In 2001, CAMS scientists started using a smaller AMS machine specifically designed to analyze carbon-14 samples for biomedical research. Because of its strong record of collaborative research, the center was awarded a National Institutes of Health (NIH) National Center Research Resource grant in 1999, which made CAMS the national center for biomedical applications of AMS.

A look at how Accelerator Mass Spectrometry works

Livermore's Center for Accelerator Mass Spectrometry (CAMS) is home to the most versatile and productive AMS facility in the world. AMS is an exceptionally sensitive technique for measuring concentrations of isotopes in small samples, typically less than one milligram. It can, for example, find one carbon-14 isotope among a quadrillion other carbon atoms.

In accelerator mass spectrometry, negative ions made in an ion source are accelerated in a field of millions of volts. The accelerated ions smash through a thin carbon foil or gas that destroys all molecular species. After passing through a high-energy mass spectrometer and various filters, the ions finally slow to a stop in a gas ionization detector. The identity of individual ions can be determined from how the ions slow down. Once the charges are determined, the detector can tell to which element each ion belongs and counts the



desired isotope as a ratio of a more abundant isotope — for example, carbon-14 as a ratio of carbon-13.

The two "tricks" that make AMS work so well are the molecular dissociation process that occurs in the accelerator and the ion detection at the end. The resulting sensitivity is typically a million times greater than that of conventional isotopic detection.

For biological studies, AMS has been used primarily for counting carbon-14 because carbon is present in most molecules of biological interest and carbon-14 is relatively rare in the biosphere.

Tritium (hydrogen-3) has also been used extensive-

ly as a tracer in biological research. The use of tritium in AMS is relatively new and holds great promise, because many molecules are easier to tag with tritium than with carbon-14. Other isotopes are measured by AMS as well, including plutonium-239, calcium-41, beryllium-10, chlorine-36, and iodine-129.

All over the world, AMS is still used primarily to count carbon-14 in archaeological and geologic

samples for dating purposes. In the 1980s, it replaced the traditional method of scintillation counting for precise radiocarbon dating, which was time-consuming and required relatively large samples. Livermore performs radiocarbon dating and many other forms of AMS 24 hours a day, seven days a week for its own research and collaborations on a fee-for-service basis.

— Katie Walter, S&TR

IN PROFILE

Science Spectrum honors Lab top performers

By Deanna Midtaune
TID

Three Laboratory employees have won awards from *Science Spectrum* magazine for being top performers in their respective science fields. Robert Shepard, Hope Ishii and Dean Williams will be honored during the Minorities in Research Science Conference in Baltimore next month. All three will also be profiled in an issue of *Science Spectrum*.

Robert Shepard, Administration and Human Resources Directorate, is the recipient of the 2006 Emerald Honors Educational Leadership Award and joins an elite group of past winners who have done everything from developing technologies for high-speed flight at NASA to producing an entirely new class of cancer-fighting drugs.

An organic chemist by training and education, Shepard is also the founding executive director of the Science and Engineering Alliance, Inc. (SEA), a nonprofit education research consortium of four Historically Black Colleges and Universities (HBCUs) located in Alabama, Mississippi, Louisiana, and Texas. The SEA, headquartered in Washington, D.C., collaborates on research projects for government agencies, the private sector and other universities to increase participation of faculty at underrepresented academic institutions in a broad range of scientific and technical disciplines. Shepard joined the SEA at its inception in 1990, giving up a prestigious job at the U.S. Nuclear Regulatory Commission (NRC).

"My position at NRC was the most senior ranking scientist of color in all of the Office of Research at that time," Shepard explained. "I mention this so young people can learn the importance of taking risk. At this point, SEA was only a concept. It did not exist. It did not have a



Robert Shepard

home location, was not incorporated, no staff, no bank account and no payroll. What we had was faith in the concept and in ourselves."

Sixteen years later, Shepard remains a strong advocate for recruiting and retaining minorities in the LLNL technical workforce.

Hope Ishii, Physics and Advanced Technologies, and Dean Williams, Computation, both earned the magazine's Trailblazer Award, which recognizes outstanding Hispanic, Asian American, Native American, African American, and women professionals in the science arena whose leadership and innovative thinking on the job and in the community extend throughout and beyond their industry. Past winners of the Trailblazer Award include former Chairman of the Nuclear Regulatory Commission Nils Diaz, and Nobel Prize winner Mario Molina.

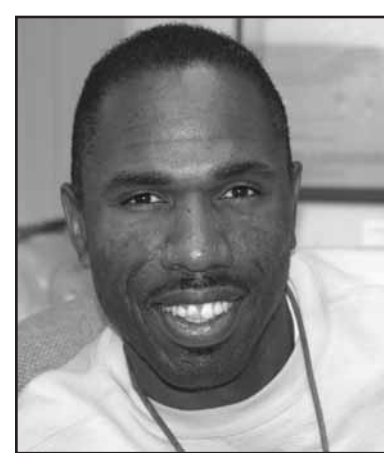
As a postdoctoral researcher in the PAT Directorate, Hope Ishii studies astromaterials and developed a method of extracting the comet dust that was returned to earth in January 2006 by NASA's Stardust mission. Her method has been implemented at the Johnson Space Center in Houston. Ishii was present when the Stardust sample canister was



Hope Ishii

opened and was one of the first scientists to work with the samples.

Although Ishii doesn't generally consider herself a minority, she remembers meeting a female



Dean Williams

Dean Williams leads (and co-leads) a variety of software projects aimed at data analysis and visualization of climate models. He is the Software Project leader for the Program for Climate Model Diagnosis and Intercomparison (PCMDI) and leads the overall development and deployment of all software products. Williams is also active in the Laboratory's recruiting efforts and participates in the summer student program to help ensure that the Laboratory continues to hire qualified minorities into scientific fields.

"It is extremely important that everyone is well represented in our society, the community, and the Laboratory," Williams said. "Representation helps to break down stereotypes and leads to a better and more productive environment for all. There are not a lot of minority role models in the sciences, and we should change that."

AHRD's Tommy Smith, Jr., organizes the Laboratory's nomination process for the *Science Spectrum* awards. He said this year was one of the first in which the Lab made earnest nominations, and he was pleased that the effort garnered three winners. "It is extremely important to elevate the visibility and bring recognition to people who are doing really good work," Smith said.

“Representation helps to break down stereotypes and leads to a better and more productive environment for all.”

—Dean Williams

professor in graduate school with whom she "clicked," which offered her a role model and a form of silent encouragement to push forward in science.

"We live in a very diverse world," Ishii said. "To use our national resources effectively for the optimum growth and development of our country, we need our scientific community and leadership to reflect that diversity."

'At HOME in our Community' goes to Camp Arroyo

September's "At HOME" project will focus on Camp Arroyo's Science Camp in Livermore. Three events are planned to inspire and motivate camp staff about current bioscience technology as well as to enlighten Lab employees about what's offered at Camp Arroyo.

Take a tour of Camp Arroyo

Wednesday, Sept. 20 and

Thursday, Sept. 21

11:45 a.m.-1 p.m. each day

Camp Arroyo, 5535 Arroyo Road,
Livermore

Lab employees — this is your chance to go behind the scenes at Camp Arroyo. Highlights will include: historical heritage; "straw-bale" dining hall — one of the biggest facilities in California; organic gardens; solar powered cabins; and many more "Green-Up" conservation advances. There will be a one-half hour tour with a guide and camp naturalist. Space is limited. To sign up, send an e-mail to either Amy at amy@ttff.org or Germaine Clark at clark75@llnl.gov.

Camp Arroyo's naturalists visit LLNL

Monday, Sept. 11, 10 a.m.-noon

Bldg. 361, room 1155

Eight naturalists from Camp



Arroyo will learn about the Biosciences Directorate with an introduction by Associate Director Elbert Branscomb, an overview of the Joint Genome Institute by David Gilbert and a tour of Biosciences' Bldg. 361 with Cindy Thomas, LLNL bio-scientist.

DNA hands-on project

Wednesday, Sept. 27

9-11:30 a.m.

Camp Arroyo

Chitra Manohar, John Hinz and Alex Anastasio will pack up equipment and head to Camp Arroyo where they'll provide three one-half hour, hands-on activities highlighting genomic DNA extraction with students to encourage and promote science.

PEOPLE NEWS

in MEMORIAM

William (Bill) Harford

William Harford, whose 31-year career included time at both LLNL and Lawrence Berkeley Lab, died August 12 at John Muir Hospital in Walnut Creek. He was 81.

Harford was born February 13, 1925 in Swampscott, Mass., and moved to Oakland with his family when he was a child. He attended Oakland schools and graduated from Castlemont High School in 1943.

He enrolled at UC Berkeley in the reserve officer program and received his commission as an ensign in the U.S. Navy. He served on the USS Honolulu and USS Fall River as a fire control gunnery officer. After leaving active service he remained in the Naval Reserves, completing submarine training at Hunters Point. He received an honorable discharge from the Navy in 1959 with the rank of lieutenant.

Harford received his Bachelor of Science degree in chemical engineering in 1948 and his MBA in 1953, from UC Berkeley. He began his career at LLNL in 1952 and was involved in the early weapons test-

ing program.

He was stricken with polio in 1954. After recovery, he returned in 1955 to serve as Budget Officer at both Berkeley and Livermore. He also served at LLNL as business manager, controller and communications manager from 1952 until his retirement in 1983.

After retiring, Harford returned to Livermore on a part time basis for 13 years as an advisor to LLESA (Lawrence Livermore Employee Services Association) and served as president of the board of directors. In retirement, he was an active member of the Diablo Country Club where he played golf. He enjoyed reading history and became an expert on the American Civil War.

He is survived by his wife Arlene of Danville; son Richard Harford of Livermore; daughter Janet Harford of Martinez; son David Harford and daughter-in-law Susan; and granddaughters, Jennifer, Elisabeth and Stephanie of Pleasanton.

A memorial service was held in Danville.

Amigos Unidos 2006 Scholarship Program

Amigos Unidos' scholarship program has had its most successful year ever. Thanks to the support of the Amigos Unidos members, the Laboratory, the Worklife Office, and Lab employees, Amigos Unidos was able to give out 14 scholarships totaling \$4,500 to students in the surrounding valleys.

The scholarship program continues to be the "main driver" for Amigos Unidos. All proceeds from events go towards the scholarship fund. Laboratory employees have helped students fulfill

their dreams by assisting them with higher education.

Scholarship recipients for this year were: Layne Salmon, \$1,000; Elizabeth Munguia, \$500; Zaira Yazmin Ortega, \$250; Antonia Starrianoudakis, \$250; Ana Maria Aranda, \$250; Patricia Regalado, \$250; Stefany Nikole Sanchez, \$250; Allison Pell, \$250; Adriana Garcia, \$250; Ana Hernandez, \$250; Gabriela Garibay Flores, \$250; Aziza Shammaa, \$250; Thomas Goad, \$250; and Veronique May Troche, \$250.

Douglas Baker Fields

Douglas Baker Fields, a 43-year Livermore resident and former Lab employee, died August 10. He was 70.

Fields was born on Dec. 24, 1935 in Boulder, Colo., and was the son of Eugene B. and Betty Fields of Martinez. He graduated from Alhambra High School in Martinez in 1953, and served in the U.S. Naval Reserve for 14 years as a yeoman. He worked for Shell Development before joining the Lab in 1961 where he worked in chemistry and alternative energy research. Before retiring in 1993, he worked to develop innovative techniques to burn coal fuels without mining.

He was a 38-year member of the Livermore-Pleasanton Elks Lodge No. 2117, a member of the United States Golf Association and the Las Positas Branch No. 121 of SIRS.

He was well known in the soccer community as one of the sport's early pioneers in the Bay Area. He was a highly skilled coach and referee, and later an active administrator of local and state soccer organizations. He

worked for many years as a volunteer for the San Jose Earthquakes and Clash, for USA Men's and Women's World Cup teams and the Olympic Games, as well as numerous youth tournaments and events throughout the area. He and his wife were inducted into the California Youth Soccer Association Hall of Fame in 1982, and recognized for their outstanding and meritorious service to Livermore by the Livermore Chamber of Commerce.

Fields is survived by his wife of 49 years, Norrine Fields; son Michael (Meg) Fields of Orinda; daughter Michele (Edward) Presley Bell of Arlington, Va; and six grandchildren.

A gathering to celebrate his life will be held at Stony Ridge Winery, 4948 Tesla Road in Livermore on Sept. 10 from 2:30-6 p.m. Dress will be "Aloha" or casual. In lieu of flowers, donations can be made to a charity of choice, or to the Pleasanton Service Extension of the Salvation Army, c/o J. Leonard, 4676 Helpert Court, Pleasanton, CA 94556.

NEWSLINE

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For an extended list of Lab beats and contacts, see <http://www.llnl.gov/pao/contact/>

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Alameda County's Tri-Valley area is a West Nile Virus hot spot

The incidence of West Nile Virus (WNV) is rapidly increasing in Alameda County, especially in the Tri-Valley area around Livermore.

The county's first two infected birds were picked up in Pleasanton early this month. Since then eight more WNV-positive dead birds have been found, all but one in the Tri-Valley. Two of the county's three positive mosquito samples are also from the Tri-Valley.

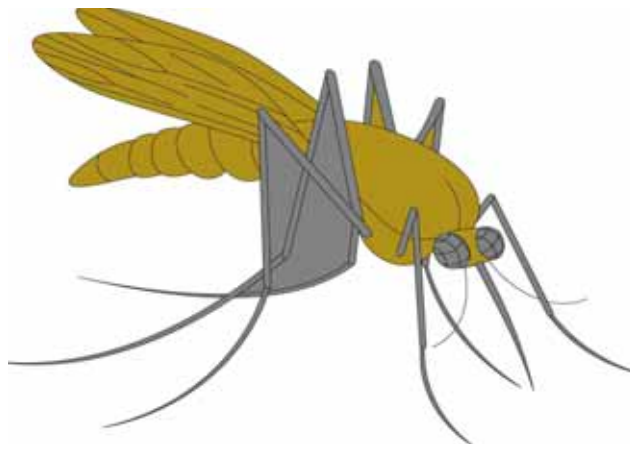
"We predicted that the Tri-Valley area, being the warmest part of the county, would be the focus of West Nile Virus infections this year. That has proven to be the case so far," said Alameda County Mosquito Abatement District Manager John Rusmisl. "We need all residents of the county, especially those in the Tri-Valley area, to check their own front and backyards for any standing water. It takes only a tiny amount of water to breed mosquitoes."

The virus is transmitted to humans and animals through a mosquito bite. Mosquitoes become infected when they feed on infected birds.

"If you find a dead bird off-site it's important to report it to the county," said LLNL Health Services Director Jim Seward. "Do not handle the bird yourself. You should also contact the county if you are being bothered by mosquitoes or know of a potential mosquito breeding source." The Abatement District's phone number is 510-783-7744.

Dead birds found on the Laboratory site, as well as standing water with suspected mosquito larvae, should be reported to the Landscape and Pest Management Office (formerly the Gardener Shop) at 3-0495 (main site) or 3-5385 (Site 300). The office's Steve Griffin said LPM personnel will pick up the birds and evaluate them for possible WNV infection, and send potentially infected birds to the Abatement District.

Seward said only about one out every 150 people infected with WNV may develop a more severe form of the illness. Adults over 50 years old and people with weakened immune systems, however, are at increased risk



of serious complications from WNV infection. "Anyone who develops symptoms such as a high fever, confusion, muscle weakness, severe headaches or stiff neck should seek medical care immediately," he said.

Human-to-human transmission of West Nile Virus generally does not occur. However, human WNV infections have been associated with blood transfusions and organ transplants.

Here are some tips to protect yourself from mosquito bites:

- **DRAIN:** all sources of standing water that can support mosquito breeding, and don't overwater your lawn.
- **DAWN and DUSK:** Avoid spending time outside when mosquitoes are most active, especially at dawn and the first two hours after sunset.
- **DEET:** Apply insect repellent containing DEET or Picaridin according to label instructions.
- **DRESS APPROPRIATELY:** When outdoors, wear long pants and long-sleeved shirts. Since mosquitoes can bite through thin clothing, use insect repellent or permethrin on clothing.
- **DOOR and window screens:** Repair or replace screens that have tears or holes.

As part of an on-going surveillance program, the

Abatement District is asking the public to report any wild birds, specifically crows, ravens, jays, magpies and birds of prey that have been dead less than 48 hours (and show no signs of decomposition), to the California Department of Health Services (CDHS). Their Website address for reporting the dead birds is: www.westnile.ca.gov. They can also be reached by phone: 1-877-WNV-BIRD (1-877-968-2473).

Since horses are very susceptible to WNV, horse owners are advised to contact their veterinarians immediately about timely vaccinations.

To date this year in California WNV has been detected in 41 counties for a total of 38 human cases (0 fatalities), 13 horses (6 died or were euthanized), 443 dead birds and more than 349 mosquito pools (pools are groups of about 50 mosquitoes tested together). In 2005 California had 935 human cases of West Nile Virus, including 19 fatalities.

The current surveillance program to monitor for WNV in California has been established by CDHS in collaboration with the University of California at Davis, the California Department of Food and Agriculture, local mosquito and vector control districts and other state and local agencies.

More information about mosquitoes and West Nile Virus can be found on the Abatement District's website: www.mosquitoes.org. Residents can also pick up mosquito-to-larvae eating fish at the district office from 7:30 a.m. to 5 p.m. for their fish ponds, horse troughs, etc. The district office is in Hayward at 23187 Connecticut Street.

Information concerning human West Nile Virus symptoms, prevention or testing is also available from the Alameda County Public Health Department at 510-267-8001.

For information regarding horses and WNV, contact the California Department of Food and Agriculture: Call the Equine West Nile information line at 1-800-268-7378; E-mail WNVirus@cdfa.ca.gov; or visit http://www.cdfa.ca.gov/ahfss/ah/wnv_info.htm.



JACQUELINE MCBRIDE/NEWSLINE

What's in store for employees

Pam Smith, acting associate director for Laboratory Services (right), and Kristen Teuscher display wares now available for purchase at the Outpost, the satellite LLESA store in the Central Cafe. The Outpost is open 11:30 a.m. to 1:30 p.m. Monday through Friday.



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